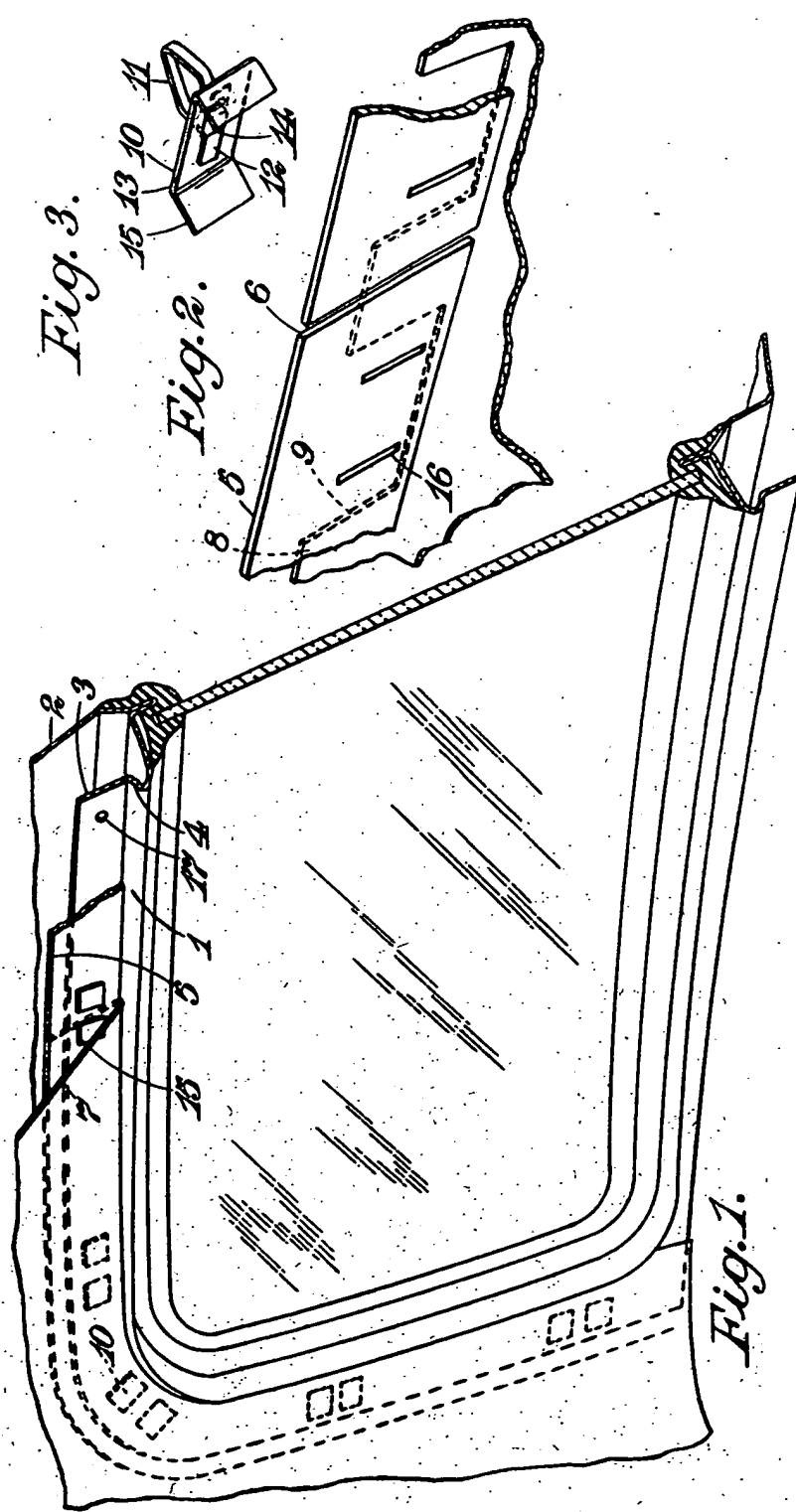


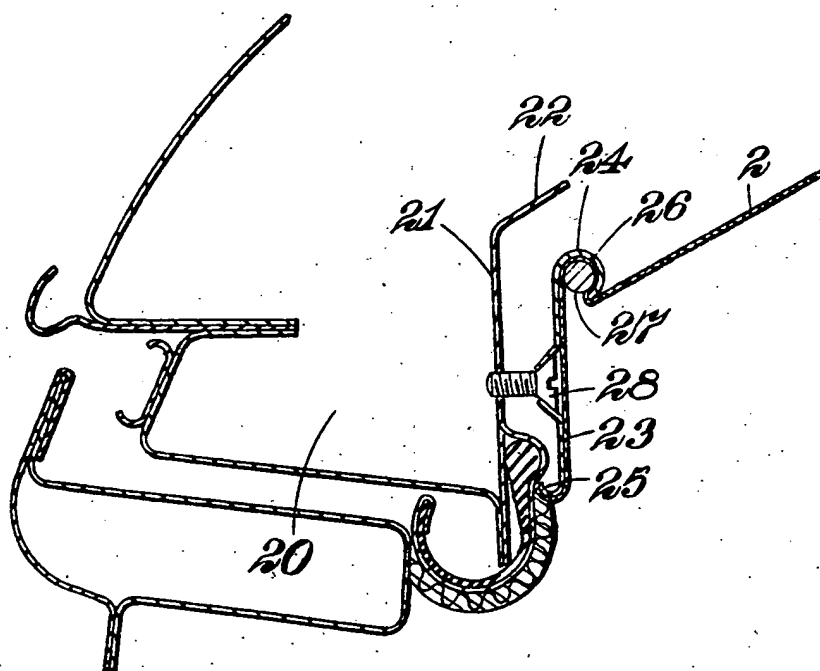
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Fig. 4.



PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in or relating to the Attachment of Linings for Motor Vehicle Body Roofs

We, HUMBER LIMITED, a British Company, of Stoke, Coventry, Warwickshire, and RICHARD NOEL NEWMAN, a British subject, of the Company's address, do hereby declare the nature of this invention to be as follows:—

This invention relates to means for the attachment of upholstery covers, linings and the like to supporting frame members. The invention is particularly, but not exclusively, concerned with the attachment of upholstery cover or lining materials to the seats and bodies of vehicles, especially motor vehicles.

An object of the invention is to simplify the attachment to supporting frame members of linings of fabric material or artificial leather, plastic or other flexible sheet material, and to provide a method and means of attachment suitable for mass-production procedure.

The method provided by the invention has several forms suitable for different applications and each form may be employed independently or, for example in the lining of a roof of a vehicle motor body, two or more of the forms may be employed as best suited respectively to the different parts to which the lining is to be attached.

According to the invention the method of attaching the cover or lining material comprises the steps of securing the material, for example at its edge, to an auxiliary frame member and then attaching the auxiliary frame member to the aforesaid supporting frame member.

The auxiliary frame may be of millboard, cardboard or the like, the material may be secured to the auxiliary frame by adhesive and the auxiliary frame may be secured to the supporting frame by spring fasteners.

The arrangement is preferably such that after attachment of the auxiliary frame to the supporting frame the material is folded back over the auxiliary frame to cover the frame and the fastening means.

An important feature of the invention is a method of tightening the material of a

lining or cover already attached to a supporting frame at one position at least. The method of tightening comprises the steps of attaching the material (e.g. by the method described in specification No. 27657/48. Serial No. 638270) at a position in the lining or cover spaced away from the part already attached to a movable frame member (e.g. a hoop in the case of a vehicle hood or roof lining), moving the member to stretch the material between the two positions of attachment and then securing the member.

Some specific examples of the invention as applied to the fabric head-lining or roof trim for the roof of a pressed steel four-seater motor body will now be described. As one example of the invention a specific method of attaching the head-lining around the back-light of the body will be described. The back-light frame is formed by pressing from the sheet steel, and there is provided on the inside of the roof panel and spaced therefrom a flange constituting the supporting frame member directed away from the back-light aperture and at a small angle towards the panel. At the root of the flange there is a step directed inwards of the body and serving as a locating frame for the edge of the head-lining.

The auxiliary frame is constructed of millboard and conforms in size and shape with the aforesaid flange. The auxiliary frame is, for ease in assembly, divided into two parts at a position on the centre line of the vehicle. The frame may, depending upon the design of the body, pass completely around the back-light or around only the top and sides thereof. The auxiliary frame is provided at intervals with spring clips as later described.

The lining material is cut to conform with the shape of the above mentioned step with an allowance equivalent to the width of the auxiliary frame by which allowance is turned back and secured by adhesive to the rear face of the auxiliary frame, i.e. the face which lies against the

[Price 2/-]

flange in the final assembly. To facilitate the attachment of the material to the auxiliary frame the material is cut away to clear the spring-clips.

The spring-clips are constructed by bending spring-strip material into the form of a hollow arrow-head with a short shank terminating in outwardly directed flanges. The clips are secured to the auxiliary frame member by anchor plates of which each is in the form of a short channel of soft sheet material having in its base a slot through which the clip is passed and which embraces the shank thereof. The sides of the channel are passed through slots in the auxiliary frame and are bent over to retain the anchor plate in position with the flanges of its clip clamped between the base of the channel and the auxiliary frame. To secure the auxiliary frame in position around the back-light the arrow-head portions of the spring-clips are pressed into holes formed in the flange and retain the auxiliary frame in position by engagement of the edges of the holes under the step portions of the arrow-heads.

The side edges of the hood-lining are secured to a cantrail. The cantrail is formed by the material of the body and provides an upwardly directed flange with an inwardly directed lip. The auxiliary frame in this construction is in the form of a strip of metal having along one edge an incompletely closed beading to one side of the

strip and the other edge turned over towards the other side of the strip. The head-lining is attached to the strip by inserting a fold into the head and is secured by threading a cane through the fold inside the head, the cane with the surrounding material being of too great a diameter to pass out through the mouth of the head. The edge of the material is passed around the turned-over edge of the strip and is held in the final assembly between that edge and the cantrail. The auxiliary frame strip is secured to the cantrail by drive screws engaging the flange, the screws also serving to tension the head-lining. It will be appreciated that the strips are secured to the material (e.g. in a jig) before attachment to the cantrail and that the strips pass along the cantrail flange. The lower turned-over edge of the strips may, if desired, be toothed to assist in securing the loose edge or border of the lining which, as already stated, is clamped between the strips and the cantrail. The strips may be replaced by a series of comparatively short plates.

It is to be understood that the invention is not restricted to the employment of the particular attachment methods in the particular positions described in the above examples.

Dated this 24th day of October, 1947.

BOULT, WADE & TENNANT,

111/112, Hatton Garden, London, E.C.1,
Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in or relating to the Attachment of Linings for Motor Vehicle Body Roofs

We, HUMBER LIMITED, a British Company, of Stoke, Coventry, Warwickshire, and RICHARD NOEL NEWMAN, a British subject, of the Company's address, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:

The invention relates to a method and means for lining the roof of a motor vehicle body with fabric, artificial leather, plastic or other flexible sheet material.

An object of the invention is to simplify the attachment of the lining and to provide a method and means of attachment suitable for mass production procedure.

The method provided by the invention may be employed independently or it may be employed in conjunction with the methods described in specifications Nos. 27657/48 and 27675/48 (Serial Nos. 638270 and 638271) as best suited to the different parts to which the lining is to be attached.

The invention provides, in the method of lining the roof of a motor vehicle body with fabric, artificial leather, plastic or other strip and the other edge turned over towards the other side of the strip. The head-lining is attached to the strip by inserting a fold into the head and is secured by threading a cane through the fold inside the head, the cane with the surrounding material being of too great a diameter to pass out through the mouth of the head. The edge of the material is passed around the turned-over edge of the strip and is held in the final assembly between that edge and the cantrail. The auxiliary frame strip is secured to the cantrail by drive screws engaging the flange, the screws also serving to tension the head-lining. It will be appreciated that the strips are secured to the material (e.g. in a jig) before attachment to the cantrail and that the strips pass along the cantrail flange. The lower turned-over edge of the strips may, if desired, be toothed to assist in securing the loose edge or border of the lining which, as already stated, is clamped between the strips and the cantrail. The strips may be replaced by a series of comparatively short plates.

[Page 2]

ment is preferably such that after attachment of the auxiliary frame to the supporting frame the material is folded back over the auxiliary frame to cover the frame and the fastening means.

Various proposals have been made (see for example specifications Nos. 25031/02 and 499162) to attach upholstery covers to auxiliary bars, rods or the like and then to employ the auxiliary members to hold the covers in position on a main frame. These proposals are not however concerned with vehicle body roof linings and do not disclose an arrangement in which a lining fabric is secured as a facing to an auxiliary frame member and is turned over the edge of the member towards the rear face.

Some specific examples of the invention as applied to the fabric head lining or roof-trim for the roof of a pressed steel four-seater motor body will now be described with reference to the accompanying drawings in which:—

Figure 1, is a perspective view, partly broken away, of the backlight of the body;

Figure 2 is a view showing one stage in the attachment of the fabric to the auxiliary frame,

Figure 3 shows a spring-clip employed to secure the frame to the body, and

Figure 4 is a section showing the method of securing the lining to one of the cantrails of the body.

In the examples shown in Figures 1, 3, the backlight frame 1 is formed by pressing from the sheet steel of the body and there is provided on the inside of the roof panel 2 and spaced therefrom a flange 3—constituting the support member—directed away from the backlight aperture and at a small angle towards the panel. At the root of the flange there is a step 4 directed inwardly to the body and serving as a locating frame for the edge of the head-lining.

The auxiliary frame 5 is constructed of millboard and conforms in size and shape with the aforesaid flange around the top and sides of the backlight. The auxiliary frame is, for ease in assembly, divided into two parts as shown at 6 at a position on the centre line of the vehicle. In an alternative arrangement to be employed when the design of the body allows, the frame passes completely around the backlight. The auxiliary frame is provided at intervals with spring-clips as later described.

The lining material 7 is cut to conform with the shape of the step 4 with an allowance 8 equivalent to the width of the auxiliary frame, which allowance is turned back and secured by adhesive to the rear face of the auxiliary frame, i.e. the face which lies against the flange 3 in the final assembly. To facilitate the attachment of the material to the auxiliary frame the

material is cut away, as indicated at 9, to clear the spring-clips.

The spring-clips, indicated at 10, are constructed, as shown in Figure 3, by bending strip material into the form of a hollow arrow-head 11 with a short shank terminating in outwardly directed flanges 12. The clips are secured to the auxiliary frame member by anchor plates 13 of which each is in the form of a short channel of soft sheet material having in its base a slot 14 through which the clip is passed and which embraces the shank thereof. The sides 15 of the channel are passed through slits 16 in the auxiliary frame and are bent over to retain the anchor plate in position with the flanges of its clip clamped between the base of the channel and the auxiliary frame. To secure the auxiliary frame in position around the backlight the arrow-head portion of the spring-clips are pressed into holes 17 formed in the flange 3 and retain the auxiliary frame in position by engagement of the edges of the holes in the step portions of the arrow-heads.

A swinging hoop or listrail is employed to tighten the roof lining after attachment to the backlight as just described. The hoop is pivoted to the body at its ends and after the material has been secured to the hoop the latter is moved away from the backlight to tension the material between the hoop and the backlight and is then secured to the body, for example by spot welding.

Figure 4 shows the method of securing the side edges of the head lining to the cantrails, the Figure showing one of the cantrails. The cantrail is formed by the material of the body and provides an upwardly directed flange 21 with an inwardly directed lip 22. The fabric lining 2 is secured to an auxiliary frame 23 consisting of a strip of metal having along one edge an incompletely closed beading 24 on one side of the strip and the other edge 25 turned over towards the other side of the strip. The head lining is attached to the strip by the method described in specification No. 27657/48 (Serial No. 638270), by inserting a fold 26 into the bead and is secured by threading a cane through the fold inside the bead, the cane with the surrounding material being of too great a diameter to pass through the mouth of the bead. The edge of the material is passed around the turned over edge of the strip towards the rear face of the strip and is held in the final assembly between that edge and the cantrail. The auxiliary frame strip is secured to the cantrail by drive-screws 28 engaging the flange. The screws also serving to tension the head lining. It will be appreciated that the strips are secured to the material (e.g. in a jig) before attachment to the cantrail and that the strips pass along the cantrail

flange. The lower turned-over edge of the strips may, if desired, be toothed to assist in securing the loose edge or border of the lining which, as already stated, is clamped between the strips and the cantrail.

The method of attaching a lining according to either of the above examples may be applied to the front of the body (i.e. over the windscreen).

10 The invention includes the provision in a motor vehicle of a head lining secured as described above.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In the method of lining the roof of a motor vehicle body with fabric, artificial leather, plastic or other like sheet material, the steps of first securing an edge portion of the material to an auxiliary frame member which is of flat form narrow in relation to the width of the lining, is elongated in the direction of the edge of the lining and has one of its longer edges conforming to the shape desired for part of the edge of the finished lining and then, attaching the auxiliary frame member to a support member of the body to hold the aforesaid edge desired for the edge of the lining with the lining material constituting a facing for one face of the auxiliary frame which facing forms part of the exposed lining surface, and with the lining material turned over the said edge of the auxiliary frame member towards the rear face thereof.

2. The method as claimed in claim 1 in which the auxiliary frame member is attached to the support member by spring-clips.

3. The method according to claim 1 or claim 2 in which the auxiliary frame member is of millboard, cardboard or the like.

4. The method according to any one of the preceding claims in which the material is secured to the auxiliary frame member by an adhesive.

5. The method according to any one of the preceding claims in which the lining material extends over part of the back of the auxiliary frame member and is attached to the back of the auxiliary frame member by adhesive to secure the lining to the auxiliary member as aforesaid.

6. The method according to claim 5 in which, after attachment of the auxiliary frame to the supporting frame the material is folded back around the aforesaid edge of the auxiliary frame to cover, as a facing, the frame and the fastening means.

7. The method of attaching the fabric

or like lining around the backlight of a motor vehicle body which comprises the steps of attaching with adhesive an edge portion of the lining to one face of an auxiliary frame of cardboard or like material conforming to the backlight, the lining passing from its attachment through the frame, attaching by spring-clips the auxiliary frame to the body in position around the backlight with said edge portion of the fabric adjacent to the body and then doubling the fabric around the inner edge of the auxiliary frame to lie, as a facing, against the outer face of the frame.

8. The method of stretching a roof lining which has been secured to a support member by one edge of the material according to any one of the preceding claims which method comprises attaching the lining at a part thereof remote from the said edge to a swinging rail and then stretching the material by movement of the rail away from the attached edge.

9. In a motor vehicle body, a roof lining of fabric, artificial leather, plastic or like sheet material secured by an edge portion to an auxiliary frame member which is of flat form narrow in relation to the width of the lining, is elongated in the direction of the edge of the lining, and has one of its longer edges conforming to, and determining the shape of, part of the edge of the lining and is secured to the body to hold the lining in place and in which part of the exposed lining surface constitutes a facing for one face of the auxiliary frame member and the lining is turned over the said edge of the auxiliary member towards the rear face thereof.

10. In a motor vehicle, a roof lining as claimed in claim 9 in which the auxiliary frame is of cardboard, millboard or the like.

11. In a motor vehicle, a roof lining as claimed in claim 9 or claim 10 in which the auxiliary frame is attached to the body by spring clips.

12. In a motor vehicle, a roof lining secured by the method according to any one of the preceding claims 1 to 8.

13. In a motor vehicle, a head lining as claimed in any one of claims 9 to 11 and is substantially as herein described with reference to Figures 1 to 3, or to Figure 4 of the accompanying drawings.

14. The method of securing a head lining in a motor vehicle as claimed in claim 1 and substantially as herein described with reference to Figures 1 to 3 or to Figure 4 of the accompanying drawings.

Dated this 22nd day of October 1948.

BOULT, WADE & TENNANT

Chartered Patent Agents

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